



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,457	10/27/2003	Bong-Jun Jang	SEC.1098	2933
20987	7590	04/28/2006	EXAMINER	
VOLENTINE FRANCO, & WHITT PLLC ONE FREEDOM SQUARE 11951 FREEDOM DRIVE SUITE 1260 RESTON, VA 20190			GUERRERO, MARIA F	
			ART UNIT	PAPER NUMBER
			2822	

DATE MAILED: 04/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/693,457

Applicant(s)

JANG, BONG-JUN

Examiner

Maria Guerrero

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-8 and 10-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-8 and 10-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the Amendment filed February 15, 2006.

Status of Claims

2. Claims 1-5 and 9 are canceled. Claims 6-8 and 10-15 are pending.

Election/Restrictions

3. Applicant's election without traverse of Species II (claims 6-14) in the reply filed on April 12, 2005 is acknowledged.

Priority

4. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6-8 and 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant admitted prior art in view of Lee (US 6,214,751) and Lee et al. (US 6,819,969).
6. Applicant admitted prior art teaches pre-creating a process atmosphere in a processing chamber of a plasma processing apparatus being the same as one in which the substrate will be processed (Fig. 2, page 4). Applicant admitted prior art shows subsequently supplying the substrates in sequence into the chamber (Fig. 2, page 4).

Art Unit: 2822

Applicant admitted prior art discloses processing a batch of the substrates spraying a process gas (TEOS) through a showerhead into the chamber towards substrates disposed in the chamber and exciting the process gas using RF power to convert the process gas into plasma (pages 1-2). Applicant admitted prior art teaches the plasma being deposited on the substrates and a portion of the chamber (Fig. 2, pages 4-5).

7. In addition, Applicant admitted prior art shows discharging the batch of substrate from the chamber and cleaning the inside of the chamber once all of the wafers have been unloaded (Fig. 2, page 5). Applicant admitted prior art discloses heating the chamber during the cleaning (page 5).

8. Furthermore, Applicant admitted prior art shows after the chamber has been cleaned, and before any more substrates are loaded into the chamber supplying a gas into the chamber to reduce the temperature inside the chamber (Fig. 2, pages 1-4). Applicant admitted prior art shows cleaning employing RF power, oxygen and C_2F_6 (page 5). Applicant admitted prior art discloses processing another batch of substrates after the cleaning (Fig. 2).

9. Applicant admitted prior art is silent about the supplying the process gas without exciting the gas with RF power. However, Lee is presented as evidence to show that in fact before any more substrates are loaded into the chamber the gas is not excited with RF power (col. 1, lines 10-65, col. 2, lines 1-65, col. 3, lines 55-67, col. 4, lines 1-65, col. 5, lines 22-30). Lee et al. '969 shows supplying the process gas before any substrate being loaded (col. 6, lines 10-60).

10. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to recognize that the process gas is not excited with RF power as suggested by Lee and Lee et al. in order to provide the time for removing any unwanted cleaning material on the walls of the chamber and to prevent particles to be formed in the wafer (Lee et al., col. 1, lines 12-18).

Response to Arguments

11. Applicant's arguments with respect to claims 6-8 and 10-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ngo et al. (US 6,127,261) and Lee (US 5,970,383) teach the step of supplying the process gas into the chamber before loading the substrates into the chamber.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Guerrero whose telephone number is 571-272-1837.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 27, 2006

Maria Guerrero
MARIA F. GUERRERO
PRIMARY EXAMINER